FirstNet in California
Final State Plan Review

Topics

- State Plan Review Process

    – Detailed overview provided in Open Session

- Evaluation Results

    – Technical Advisory Group

- Analysis Review

    – SME Review Team

- California's Options

- Next Steps

What we were looking for from FirstNet and AT&T

	Description
	Answers by FirstNet to all 687 comments submitted by California.
	A site hardening plan.
	X,Y,Z Location-based coordinates delivered by end of 2018.
	Build-out commitments with locations and dates. A commitment to average of 100 sites per year for years 1-5 and then 400 sites per five year block in years 5-10, 10-15, 15-20, 20-25.
	A dispute resolution process.
	Commitment on number of deployables in California (anything less than six is unacceptable).
	Plan for LA-RICS integration.
	Clarification on unlimited data cost question (AT&T committed to giving Cal OES in writing).
	Process to establish priority for new site construction and coverage enhancement that involves Cal OES in the process.

What we were looking for from FirstNet and AT&T cont'd

	Description
	Unlimited data on all mobile devices.
	Me-too clause (in relation to concessions granted to other states).
	Secure access to CLETS/CJIS.
	Updated coverage maps that reflect realistic depiction of coverage.
	Agreement with Cal OES to leverage state and local public safety communications infrastructure and allows state and local agencies a streamlined, cost effective path to leverage AT&T sites.
	AT&T engineering assistance with mobile installs and support for smaller agencies.
	True application interoperability regardless of users' service provider.
	State involvement with Public Safety Homepage/User Portal interface development to ensure it meets user needs.

State Plan Review

- California conducted parallel review streams:
  - Technical Advisory Group (TAG) Evaluation
    - Comprised of 22 Members
    - Focused on Reviewing Information in Portal
      - Portal Updates – FirstNet Delivered on time: 9/19/17
      - AT&T Letter – Delivered 2 days late: 9/21/17
      - Answers to 687 Comments - Delivered 3 days late: 9/22/17
      - Official Governor's Notice – Delivered 10 days late: 9/29/17
  - Subject Matter Expert (SME) Analysis
    - Comprised of SAIC Subject Matter Experts
    - Focused on all data available
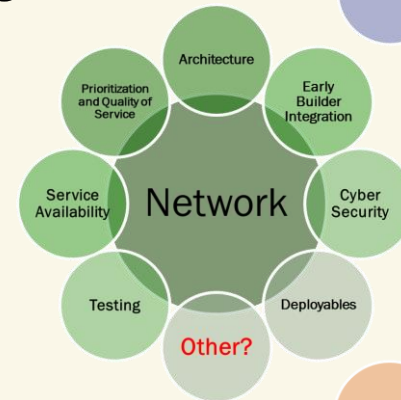
Technical Advisory Group Evaluation

- Developed evaluation topics based on outreach comments and consultation priorities

- Assigned Technical Advisory Group members to each group

- Used scorecard to rate evaluation topics (Exceeds, Meets, or Does Not Meet California's public safety needs)

- Numbers were assigned to ratings, Exceeds=5, Meets=3, Does Not Meet=1

- Submitted scores were totaled, tallied, and averaged

- Groups areas were weighted based on priorities identified during outreach

Review Working Groups

Group A: Coverage and Deployment Phasing, Rural, Tribal, and Deployables

Group B: Network Resiliency and Security

Group C: Service Plans, Devices, Operations and Local Control, and Applications

Score Card

Technical Advisory Group - FirstNet State Plan Review

A. Coverage and Deployment Phasing, Rural, Tribal, and Deployables

Scoring Matrix

Reviewer: _____

For each topic below, please assess whether AT&T's state plan solution

H – Exceeds, M – Meets, or L – Does not Meet

California's needs for this comment topic

No.	Topic	Rating	Supporting Statement	Reviewer Comment*
1	Coverage gaps		The plan describes how coverage gaps will be addressed.	
2	In-building coverage		The plan provides in-building coverage at critical sites.	
3	Tribal area coverage		The plan specifically addresses coverage for tribal areas, with plans for improvement.	
4	Deployable staging		The plan describes a specific number of deployables and where they are located.	
5	Deployable response time		The plan specifies the time between when a deployable is requested and when it is on site and operational.	
6	Coverage timeline		The plan provides a specific timeline for adding coverage assets.	
7	Coverage planning		The plan describes an approach that includes input from the State and local agencies for prioritizing new site construction and coverage enhancements.	
8	Agency infrastructure		The process describes the process for co-locating radio access network (RAN) equipment at agency-controlled tower sites.	
9	Level of detail		The plan has sufficient detail to evaluate the issues under consideration.	

*Use the notes field for any comments. For sections rated "L" include the comment, "But would meet if…", specifying what is needed to meet California's needs

TAG Evaluation

Group A: Coverage Evaluation Topics

| Topic	Supporting Statement
Coverage gaps	The plan describes how coverage gaps will be addressed.
In-building coverage	The plan provides in-building coverage at critical sites.
Tribal area coverage	The plan specifically addresses coverage for Tribal areas, with plans for improvement.
Deployable staging	The plan describes a specific number of deployables and where they are located.
Deployable response time	The plan specifies the time between when a deployable is requested and when it is on site and operational.
Coverage timeline	The plan provides a specific timeline for adding coverage assets.
Coverage planning	The plan describes an approach that includes input from the State and local agencies for prioritizing new site construction and coverage enhancements.
Agency infrastructure	The process describes the process for co-locating radio access network (RAN) equipment at agency-controlled tower sites.
Level of detail	The plan has sufficient detail to evaluate the issues under consideration.

Group B: Network Evaluation Topics

Topic	Supporting Statement
Site hardening	Mission critical radio access network (RAN) sites comply with public safety grade site hardening requirements (NPSTC TIA-222 Rev. G Class Ill standard) Non-mission critical sites have minimum 8-hour battery backup.
LTE-LMR interference	The plan describes a resolution process to resolve any LMR interference issues caused by the AT&T RAN.
BYOD network protection	The plan describes how AT&T will protect the network from any corrupting features that may be present on personally-owned devices.
Public safety systems	The plan describes the features and support needed to integrate with public safety information systems, such as public safety answering points (PSAPs), Next-Gen 911, and Criminal Justice Information System/California Law Enforcement Telecommunications System (CJIS/CLETS).
LA-RICS assimilation	The plan describes the assimilation of LA-RICS assets, features, and functionality into the FirstNet network.
Network availability	The plan describes AT&T's process for achieving 99.99% end-to-end availability including backhaul and redundancy strategies.
Network security	Plan describes how AT&T will provide end-to-end network encryption and compliance with security standards, such as FISMA and NIST.
Level of detail	The plan has sufficient detail to evaluate the issues under consideration.

Group C: Service Plans Evaluation Topics

Topic	Supporting Statement
Quality of Service, Priority and Preemption (QPP) administration	The plan describes how priority and pre-emption levels will be set, administered, and maintained, both initially and in an on-going basis.
Legacy applications	The plan describes how legacy applications will be added to the network and how proprietary matters will be resolved.
Bring Your Own Device (BYOD) administration	The plan describes the process for managing the authority, applications, and usage of personally owned devices of public safety employees and volunteers.
BYOD registration	The plan describes the standards required to register personally-owned devices on the FirstNet network.
Device pricing	The plan describes a device pricing structure that is simple, specific and predictable for future budget planning.
FirstNet compliance	The plan describes a commitment compliance process for AT&T and FirstNet.
Issues resolution	The plan describes an issues resolution process for AT&T and FirstNet.
Applications interoperability	The plan describes interoperability of applications regardless of users' service provider.
Public Safety Homepage/User Portal	The plan involves input from the State on portal user interface to ensure it meets public safety user needs.
Level of detail	The plan has sufficient detail to evaluate the issues under consideration.

TAG Evaluation

Weightings based on Priorities

Survey Priority	Percent	Working Group
Coverage and Capacity	54%	A
Rural	2%	A
Timeline of Deployment	2%	A
In-Building Coverage	1%	A
Coastline	1%	A
Tribal	0%	A
Early Builder Integration	5%	B
Prioritization and Quality of Service	3%	B
Cyber Security	3%	B
Service Availability	2%	B
Architecture	1%	B
Cost	15%	C
CLETS and other critical data	3%	C
Customer Service Quality	2%	C
Devices	2%	C
PSAP Data and CAD Interface	1%	C
Applications Integration	1%	C

Service Plans 25%

Network 14%
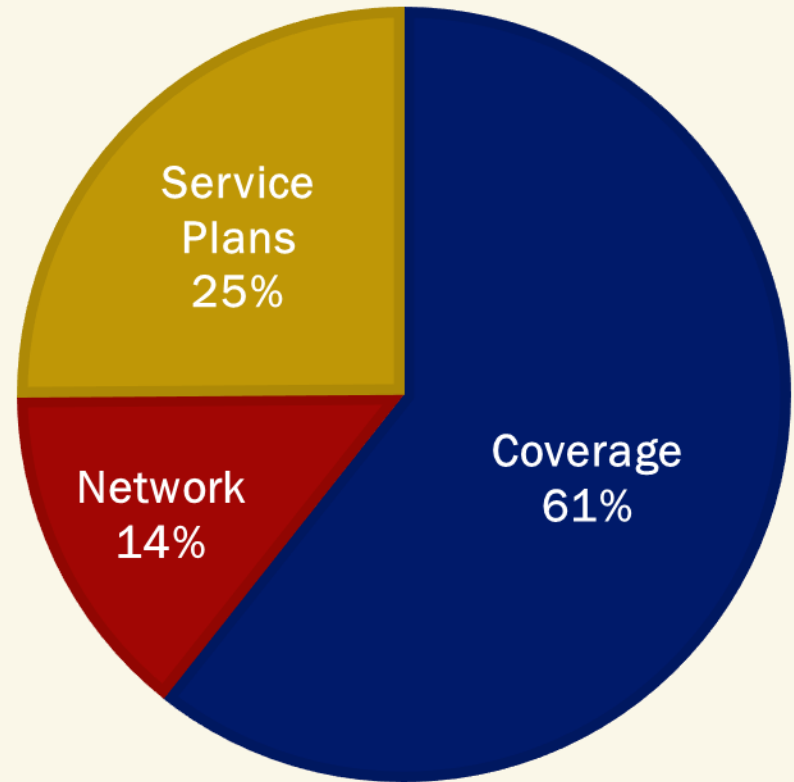
Coverage 61%

Comments from Evaluations

A. Coverage and Deployment Phasing, Rural, Tribal, and Deployables

"Plan doesn't clearly indicate existing coverage gaps... omits measured speeds in rural counties and regions, where coverage and capacity will be needed for the most common natural disasters..."

"Number of deployables appears low to serve all users in California... locations may not be adequate..."

"The plan description indicates AT&T will "work with" Cal OES... there is no clear process description."

"The limited information is a frustration... yet the scope of this project is not something the State has the resources to tackle. This network is important to our first responders. Conceivably accepting what is presented may be the best approach."

Comments from Evaluations

B. Network Resiliency and Security

"There is no information given or describing how the hardening process is achieved other than claiming to meet the standards…"

"The plan is relying on the customers to protect BYOD based on their own MDM solutions. There is no isolation or separation of non-verified Band-14 devices."

Regarding LA-RICS: "The Consultation letter merely mentions an intent to integrate the user community, not the technology and resources."

"The plan talks on a high level of having various security models. However, there is no actual detail describing what, where, and how the network is being secured."

"FirstNet is appearing more as a marketing arm of AT&T and not the Emergency Services Network that Congress envisioned. Stop touting the grandeurs of AT&T and show us what we want to see."

Comments from Evaluations

C. Service Plans, Devices, Operations and Local Control, and Applications

"… concerns about the Incident Management Tool not being used in an efficient manner since it is held at each agency's local control"

"… agency can bring their apps with them as long as it doesn't cause problems for other users… overall a fair stance by FirstNet but will become an area of significant interest and issue with the agencies should their apps prove difficult to approve."

"… based on the local control parameters it will be incumbent on the agency to program the (BYOD) device. This may prove to be a difficult and inefficient way to do so…"

"… there is no way to determine final pricing other than to say agencies will know the maximum price, but the minimum or "real" price is unknown… one area that is still problematic is AT&T's desire to limit their unlimited plans. This can be particularly problematic for users who will rely on video…"

"…unclear how other networks will interoperate with the FirstNet Core"

Evaluation Score Results

- Coverage Average Score: **1.9**

- Network Average Score: **1.9**

- Service Plans Average Score: **2.2**

- Overall Weighted Score: **2.0**

Scoring Legend	
FirstNet's State Plan	
5	Exceeds
3	Meets
1	Does Not Meet

LA-RICS – State Perspective

- New Sites implemented with State and Local input. A commitment to place ~20-25% sites based on Public Safety needs

- Minimum of 100MHz of spectrum in urban areas, with 30% of Band 14 for Public Safety only

- 95% of all sites hardened with generator backup within 10 years

- 99.999% network reliability in 10 years

- View of current network status for outages, performance KPIs, usage and congestion statistics will be provided on a per-site and per-agency boundary basis

- Provide agency ability to monitor performance and activity

- Deployables available within 4 hours and all must have broadband backhaul

- Equal or better pricing than all other LTE service providers

- FirstNet and AT&T shall not impede interoperability between carriers and 3rd party system/service providers

- AT&T will provide new devices and applications to the State of California for testing, as they become available, prior to commercial launches

LA-RICS Recommendation: A real commitment with objective performance threshold and accountability is what California must have

SME Analysis

FirstNet's final State Plan included:

- Updates to State Plan Portal webpages

- Consultation Letter to California with:

  - Clarifications and Responses

  - California Critical Infrastructure Coverage

  - FirstNet New Site Build Map

- Comment Response Package with responses to all 687 comments

SME Analysis

Courtesy of FirstNet

Analysis Approach

- Subject matter experts in:

  - Wireless telecommunication

  - Cybersecurity

  - Financial analysis

  - Public safety

- Team reviewed all materials

- Same team reviewed draft plan

- Goal: Determine impacts to California

Courtesy of FirstNet

Results: Final Plan Strengths

- After much Cal OES negotiating, revised plan now has considerable detail regarding AT&T's <u>intended</u> California deployment, such as:

    - Number of current cell sites
    - Number and location of new site builds in next 5 years
    - Intent to invest in new sites annually over next 10 years

- Also at Cal OES urging, plan now specifies the backup power and throughput for AT&T cell sites covering California critical infrastructure, such as 9-1-1

- Offers ongoing discussions to plan deployment coverage, sharing AT&T coverage maps and drive test data

- Added Tribal areas to the coverage map and provided site-specific info

- Clarified that the Unlimited Plan is unlimited for routine use, only restricting heavy use of specific agency-prioritized applications

- Documented deployable request process

- Plans to mitigate border interference from Mexico by using non-Band 14 frequencies

SME Analysis

Final Plan Strengths cont'd

- Added definitions clarifying Authorized (Agency Paid or Subscriber Paid), Primary, and Extended Primary Users

- Added practical web links to bring your own device (BYOD) compatibility tool, wireless device (phones and tablets) and specialty device (trunk mounted modems) catalogs

- Identified no-cost training, both lead-led and on-demand, for:
  - Public Safety Home Page/Local Control
  - Ordering and Account Management
  - Offers and Devices
  - Products and Solutions
  - Incident Management

- Will begin accepting local public safety apps for certification on 9/30/17

- Added information in Roadmap showing products and services to be delivered through 2022

- Will keep State Plan Portal open until March 2020

SME Analysis

Results: Final Plan Weaknesses

- Current coverage falls short of competing providers, and planned coverage falls short of public safety long term needs, requiring continued consultation with Cal OES and public safety during deployment

- Coverage maps continue to be inaccurate, limiting use

- Fails to commit to Public Safety Grade requirements, instead offering "selective and critical site hardening" where "reasonable and appropriate"

- Only a qualified intent to assimilate LA-RICS assets into AT&T network

- Acknowledges that using AT&T's local control Incident Management Tool (IMT) will require public safety learning curve and added governance

- Lacks sufficient detail regarding satellite partner service

- Confirms that network segments are encrypted but that an optional mobile virtual private network (VPN) solution is needed for end-to-end encryption

SME Analysis

Plan Weaknesses cont'd

- Relies on AT&T Security Policy and Requirements (ASPR) standard, an ISO 27001 security framework of over 500 security controls; however, since this standard is proprietary, it's impossible to assess its effectiveness

- Fails to commit to specific plans for coverage gaps

- Unclear on true application interoperability, i.e., apps will work regardless of which network a device is on

SME Analysis

FirstNet/AT&T Comment Responses Summary

Received responses for all 687 comments submitted to FirstNet

- 41 are "thank you" only or similar acknowledgement

- 95 point to material published on the proprietary State Plan Portal

- 94 addressed coverage comments with an intent to work together:

> "Where specified, additional coverage requirements for California can be compiled and provided to AT&T's RF Engineering team that design network sites. It is our intention to work with public safety in California to continuously identify coverage issues with ongoing consultation throughout implementation. FirstNet recognizes that agencies will not adopt service until coverage is sufficient to meet your public safety needs."

SME Analysis

Comment Responses Summary cont'd

- Review of state comment responses reveals little new information probative to the decision process

- Responses tend to be repetitive, often using language directly from the portal or assurances that AT&T and FirstNet are committed to cooperation and excellence

- Use of aspirational words, such as "intends," "welcomes," and "understands" raises concern regarding AT&T and FirstNet's commitment to California's public safety stakeholders

SME Analysis

Comment Responses Summary cont'd

- Language used in responses offers no metrics by which progress or performance can be evaluated by the State

- Lack of means to enforce the terms or details of the proposed plan

- No details on LA-RICS assimilation: "intends" to integrate users but no mention of assets

- Only 4 in-state FirstNet deployables planned for California

- FirstNet and AT&T, <u>after significant pressure,</u> allowed California to send responses back to stakeholders

SME Analysis Summary

- The State Plan makes clear the arduous, costly, and risk-filled path for states choosing to build and operate their own public safety networks

- Setting aside the opt-out alternative, and even given California's coverage challenges and AT&T's incomplete wireless footprint, opting into FirstNet may still be the most prudent decision for the Governor

- The increased competition it will generate among wireless carriers will result in better service, wider coverage, and lower cost for public safety users and the public at large

- The ultimate "opt-in" decision still lies with public safety agencies, as they decide whether to subscribe to FirstNet on behalf of their first responders

California's Options

- Opt-Out

- Opt-In

- No Decision

Opt-Out – Not an Option

- Requires an unrealistic number of subscriptions / connections – over 200,000 primary and 100,000 extended primary users

- Requires almost $3 billion of Spectrum Lease Payments

- Penalties exceed $15 billion

Opt-In – Not an Option

- Does not guarantee sites will be built to support needed public safety coverage

- Does not guarantee sites will be hardened to public safety grade

- Does not guarantee that applications will support interoperability between all carriers or other systems

- Does not guarantee that user portal will meet stakeholder needs

- Does not guarantee integration of LA-RICS equipment and users

- Does not guarantee a suitable plan for deployables

Next Steps

- Governor presented with all available and relevant information

- Governor reviews and makes opt-in/opt-out/no decision for California
  - Governor's 90-day review period is 9/30 – 12/28

- Next CalFRN Board meeting December 6, 2017

Questions?